

Central Valley Flood Protection Plan

HANDOUT 4

Round 2 Management Actions Workshop – URBAN AREAS

DRAFT WORKSHOP WORKSHEET

Management Action Category/ ➤ Subcategory	Compatibilities with Urban Areas	Conditions that Support Implementation	Implementation Challenges	Ways to Alleviate Implementation Challenges
Flood Protection System Modification ➤ Bypasses (Expand/New) ➤ Setback Levees ➤ Levees	<ul style="list-style-type: none"> Reduces the frequency of flooding for urban areas Overall improved protection of lives and property over the long term Setback levees can reduce long-term O&M associated with erosion and other river processes Strengthening levees reduces the risk of levee failure; reduces O&M costs ... 	<ul style="list-style-type: none"> Raise existing levees where land is at a premium and other flood protection measures are not feasible For bypasses and setback levees, need areas connected to historic floodways For bypasses and setback levees, need minimal infrastructure and urban development Requires suitable geotechnical conditions Requires suitable topographic conditions ... 	<ul style="list-style-type: none"> Costs may be high Potentially increased environmental permitting and mitigation costs Construction of new levees or setback levees depends on land availability and feasibility of other flood protection measures Urban areas have significant number of bridge and railway crossing Land use planning driven by economic development not always compatible with flood planning Potential impacts to community land uses as a result of levee footprint Potential impacts to transportation corridors or utility infrastructure into/out of the community New/expanded bypasses may depend on landowner willingness ... 	<ul style="list-style-type: none"> Leverage funding from multiple projects to receive flood benefits as part of larger, regional projects Greater financial incentives are available for multi-benefit projects Easements to compensate for changes in land uses ...

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<p>Floodplain Management</p> <p>➤ Acquisitions and buyouts</p>	<ul style="list-style-type: none"> Overall improved protection of lives and property over the long term ... 	<ul style="list-style-type: none"> More opportunity for compatible land use management in settings where land use not yet developed Eliminate subsidies for structures that are repetitively damaged ... 	<ul style="list-style-type: none"> Local zoning regulations Private property rights, and water rights Costs may be high; potential reduction in tax revenue ... 	<ul style="list-style-type: none"> Combine with land use policy MAs that encourage compatible land uses with floodplain Leverage funding from multiple projects to receive flood benefits as part of larger, regional projects ...

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Floodplain Management ➤ Floodproofing (wet floodproofing; dry floodproofing)	<ul style="list-style-type: none"> • Could provide overall improved protection of lives and property over the long term • Allows community to stay intact (avoids relocation or major infrastructure changes) • Protection of critical infrastructure • ... 	<ul style="list-style-type: none"> • Relatively shallow flood depths; slow rate of rise of flood water; low velocity flood waters • Certain types of structures such as structures that must be located near water (docking, seafood processing, port facilities), accessory structures (parking structures, detached garages, storage facilities) • ... 	<ul style="list-style-type: none"> • Local zoning regulations • Increases in costs for building standards adoption and enforcement • May also require changes to infrastructure/utilities and common areas • Accessibility and evacuation (access, egress) • ... 	<ul style="list-style-type: none"> • Goes along with Policy and Regulations MAs that encourage compatible land uses with floodplain function • Can combine alternative floodproofing techniques (wet/dry floodproofing, elevation, relocation) • ...



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Floodplain Management ➤ Risk awareness/ mapping ➤ Insurance	<i>Management actions in this subcategory are community-independent</i>			

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Additional Floodplain & Reservoir Storage ➤ <i>Reservoir Storage</i>	<ul style="list-style-type: none"> • Could increase level of protection from flood to urban areas • Increased flood protection can provide increased security and stability which can help improve social, political, financial well being of an urban community • ... 	<ul style="list-style-type: none"> • Areas with minimal community development • ... 	<ul style="list-style-type: none"> • Limited financial resources within urban communities • Can impact downstream channel conditions, such as aggradations due to reduced channel flows • ... 	<ul style="list-style-type: none"> • Systemwide coordinated operations thru Flood operations agreements • Greater financial incentives are available for multi-benefit projects • ...

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Additional Floodplain & Reservoir Storage ➤ <i>Floodplain Storage (transitory storage)</i>	<ul style="list-style-type: none"> • Could increase level of protection to urban areas located downstream of transitory storage • Increased flood protection can help provide increased security and stability which can help improve social, political, financial well being of a rural/agricultural setting • Could augment local water supplies (through groundwater recharge) • . . . 	<ul style="list-style-type: none"> • Large areas connected to historical floodways • . . . 	<ul style="list-style-type: none"> • If lands taken out of production, loss of local tax base and potential impact on community-based industries • Potential impacts to adjacent lands and uses and potential for future development • . . . 	<ul style="list-style-type: none"> • Flood easements to compensate for changes in adjacent land use • Incorporate/integrate recreation or other urban area benefits • . . .

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Storage Operations ➤ Objective releases ➤ Flood storage allocation	<ul style="list-style-type: none"> • Provide increased level of protection to urban areas • Increased flood protection provides increased security and stability which can help improve social, political, financial well being of an urban community • . . . 	<ul style="list-style-type: none"> • Requires suitable downstream channel conditions • . . . 	<ul style="list-style-type: none"> • Changes to objective releases could impact downstream channel conditions, such as aggradations due to reduced channel flows, which could add unintended risk to small communities adjacent to these downstream channels • Institutional structures and water control manuals currently in place are insufficient to support coordinated operations between upstream reservoirs and downstream systems which could result in unintended impacts to small communities • 	<ul style="list-style-type: none"> • Combine release changes w/downstream channel improvements as appropriate • Combine storage operations w/updates to water control manuals to include systemwide operations criteria as appropriate • Combine storage operations with new policies that address coordinate operations among local, state, and federal institutions • . . .

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Disaster Preparedness and Flood Warning	<ul style="list-style-type: none"> Improve speed and effectiveness of response to flood Clear identification of flood fighting, emergency response and recovery role Overall improved protection of lives and property over the long term 	<ul style="list-style-type: none"> Availability and accessibility of flood fighting materials ... 	<ul style="list-style-type: none"> Long-term storage and upkeep costs for materials Limited funding and institutional capacity Local flood contingency planning and regional response planning challenges (access, egress, warning, and communications) Confusion regarding flood fight roles and responsibilities ... 	<ul style="list-style-type: none"> Provide adequate funding and identify appropriate means for reimbursement Documents and policies that clearly describe flood fighting role Purchase and position flood fighting materials in preparation for a flood event ...

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Flood Fighting, Emergency Response & Flood Recovery	<ul style="list-style-type: none"> Improve speed and effectiveness of response to flood Clear identification of flood fighting, emergency response and recovery role Overall improved protection of lives and property over the long term 	<ul style="list-style-type: none"> Levees clear of obstacles (i.e., unmaintained/unpermitted encroachments, large woody vegetation, etc.) that otherwise could impair flood fighting activities Availability and accessibility of flood fighting materials, especially for communities that lack easy access to these materials ... 	<ul style="list-style-type: none"> Limited funding and institutional capacity Financially punitive regulations governing non-jurisdictional response Lack of comprehensive mutual aid agreements covering flood response Confusion regarding flood fight roles and responsibilities Critical infrastructure located within the floodplain ... 	<ul style="list-style-type: none"> Provide adequate funding and identify appropriate means for reimbursement Address policies and procedures that govern roles/responsibilities at Federal, State, local level Combine with land use policy MAs that encourage compatible land uses with floodplain ...

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Ecosystem Restoration	<ul style="list-style-type: none"> Wetland creation in areas near urban areas may be more accepted with cooperative efforts to use coalition building techniques to enhance flood protection to adjacent urban areas ... 	<ul style="list-style-type: none"> ... 	<ul style="list-style-type: none"> Managing lands in floodplain for wildlife benefits might limit options for reducing flood risk to urban areas with development in the floodplain Floodplain restoration is likely to occur and will require stakeholder participation and buy-in which may be difficult ... 	<ul style="list-style-type: none"> ...

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Finance & Revenue	<ul style="list-style-type: none"> ... 	<ul style="list-style-type: none"> ... 	<ul style="list-style-type: none"> Tax revenues limit funding for maintenance and repair activities ... 	<ul style="list-style-type: none"> Leverage federal and multiple projects to make O&M more affordable ...

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Policy & Regulations	<ul style="list-style-type: none"> • More opportunity for compatible land use management in urban areas where land use not yet fully developed • ... 	<ul style="list-style-type: none"> • ... 	<ul style="list-style-type: none"> • ... 	<ul style="list-style-type: none"> • ...



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<p>Operations & Maintenance</p> <ul style="list-style-type: none"> ➤ Vegetation Mgmt ➤ Dredging & Clearing ➤ Administration of Encroachments/ penetrations ➤ Inspections, etc 	<ul style="list-style-type: none"> • ... 	<ul style="list-style-type: none"> • ... 	<ul style="list-style-type: none"> • ... 	<ul style="list-style-type: none"> • ...



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Permitting	<i>Management actions in this category are community-independent</i>			



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